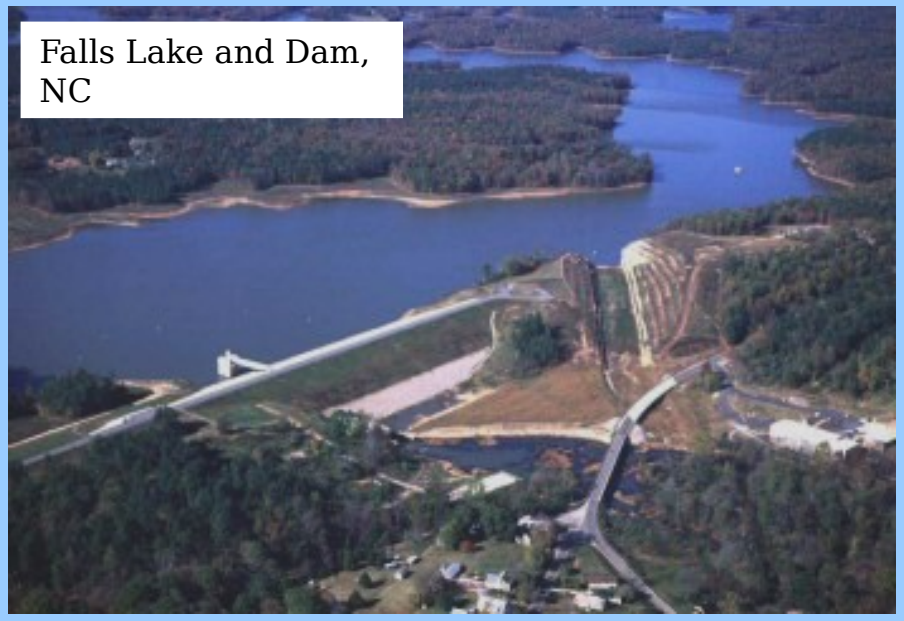
US Army Corps of Engineers®

Database and Water Supply Study



Falls Lake and Dam, NC

Water Supply Workshop

Wilmington, NC
November 4-6, 2003

Presented by:
Ted Hillyer
Institute for Water Resources

Database Overview - 1996 Data

- **9.5 million AF of M&I storage space in 117 reservoirs**

  - 24 States + PR, covered by 237 water supply agreements

  - $1.3 billion in contract value

  - includes 775,000 AF in 20 reservoirs not under contract

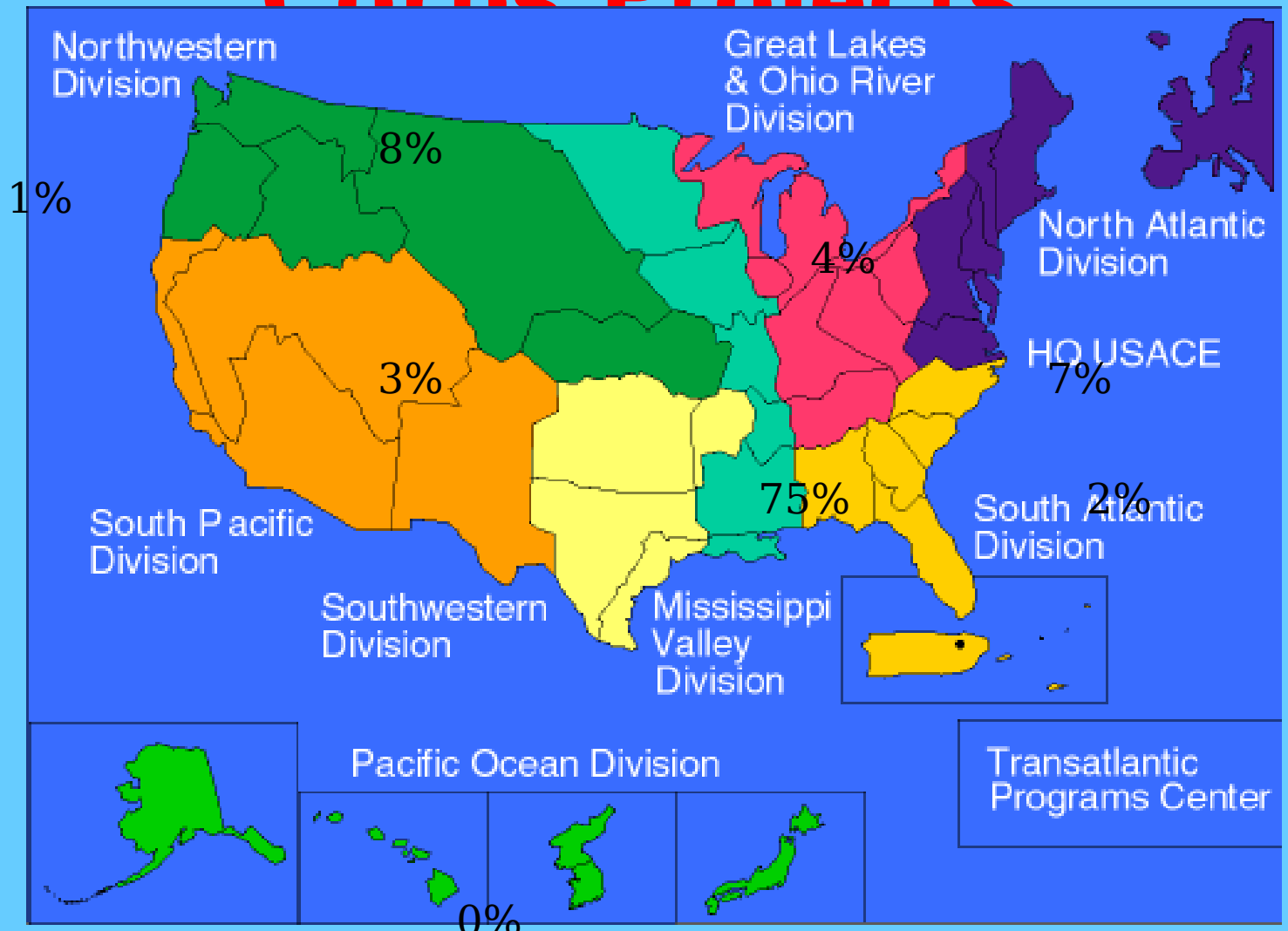
- **57 million AF of storage for irrigation and other uses in 40 reservoirs in the West (only 1 million of which is specific irrigation)**

- **Over 500 reservoirs where possibility exists to add M&I storage (based on 1992 report)**

M&I Storage Distribution

Division Proj./Cont.	Storage Space (acre-feet)		
	Present Use	Future Use	Total
NAD: 7/8	138,450	4,000	142,450
SAD: 10/19	120,626	96,740	217,366
LRD: 17/19	577,940	53,469	631,409
MVD: 6/5	181,900	187,750	369,650
NWD: 12/15	184,360	622,880	807,240
SWD: 63/168	4,873,217	2,012,399	6,885,616
SPD: 2/3	258,900	212,000	470,900

Geographic Distribution of M&I WS Storage in Corps Projects



M&I Contract Price Distribution

Division Proj./Cont.	Contract Price ($000)			
	Present	Future	Conduit	Total
NAD: 7/8	127,133	7,500	0	134,633
SAD: 10/19	107,984	9,586	219	117,789
LRD: 17/19	54,393	15,996	68	70,456
MVD: 6/5	22,757	18,904	0	41,661
NWD: 12/15	25,032	86,623	2,696	114,351
SWD: 63/168	319,667	394,484	35,591	749,742
SPD: 2/3	8,290	96,625	0	104,915
Total: 117/235	**665,256**	**629,718**	**38,574**	**1,333,548**

M&I Storage Not Under Contract

State	No. of Projects	Storage (AF)	% of Total
W. Virginia	1	2,200	0.3
Oregon	1	8,600	1.2
Missouri	3	101,900	13.1
Arkansas	2	167,800	23.7
Oklahoma	13	494,500	61.7
Total	**20**	**775,000**	**100.0**

M&I Storage Not Under Contract

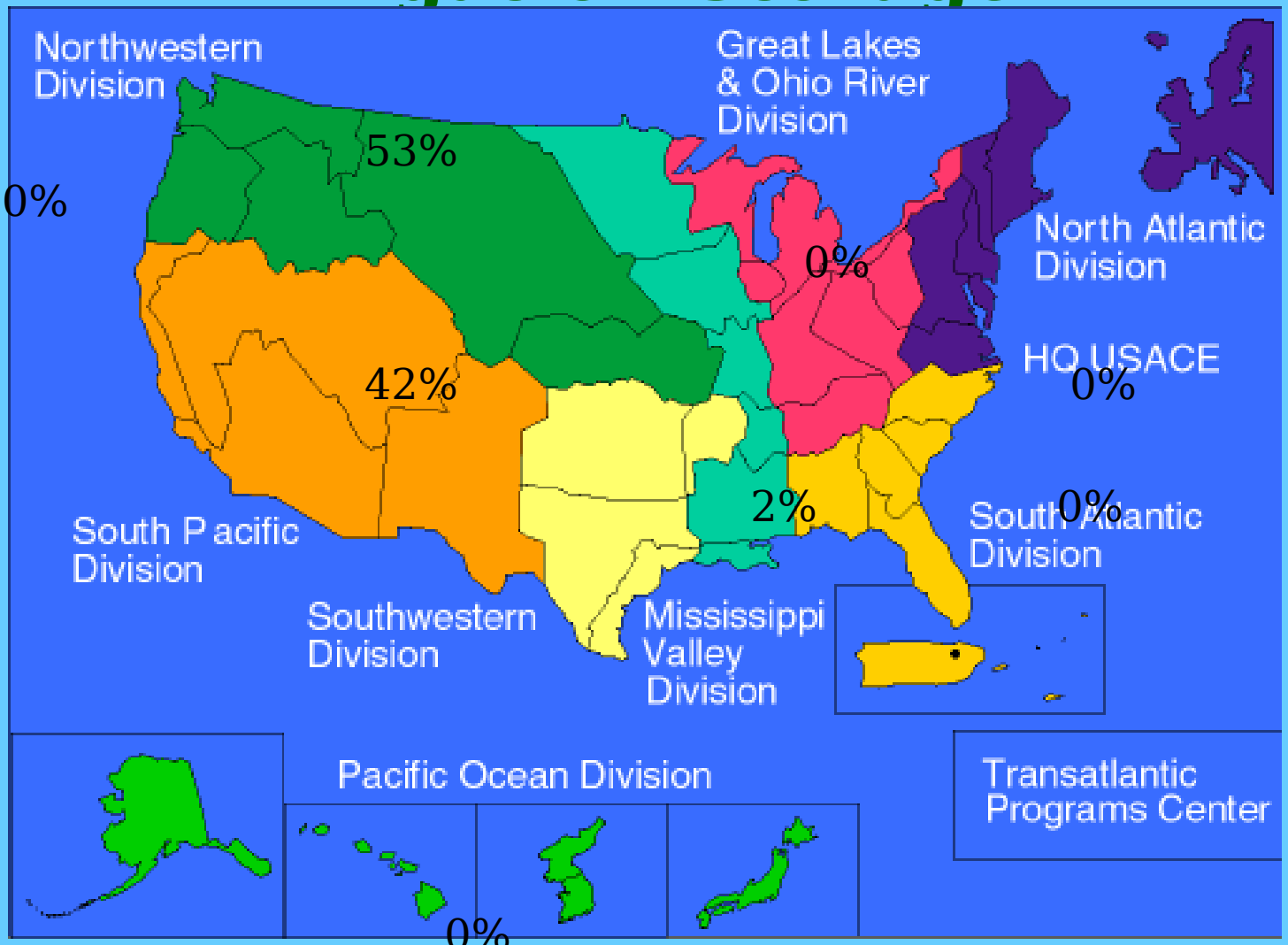
Districts and Projects

State	District(s)	Projects
West Virginia	Pittsburgh	Stonewall Jackson
Oregon	Portland	Lost Creek
Missouri	St. Louis	Clarence Cannon
	Kansas City	Long Branch Smithville
Arkansas	Vicksburg	DeGray
	Little Rock	DeQueen
Oklahoma	Tulsa	13 projects

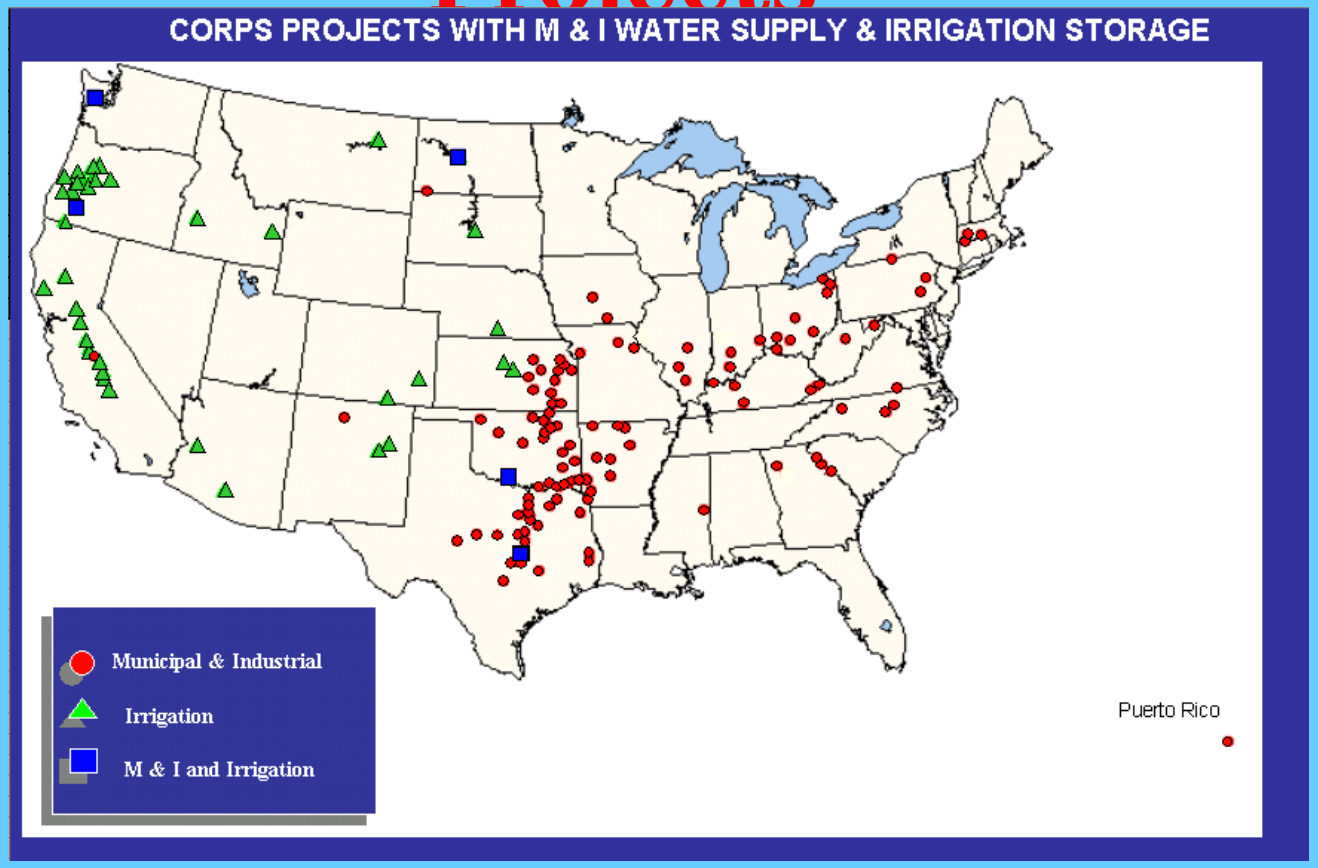
Irrigation Storage Distribution

Division / Number of Projects	Non-Federal Cost ($millions)	Joint-Use Storage (AF)	Specific Irrigation Storage (AF)
Northwestern / 21	915.2	50,348,000	312,000
South Pacific / 17	316.4	5,677,000	597,000
Southwestern / 2	43.4	0	63,800
Total 40	**1,275.0**	**56,025,000**	**972,800** 8

Geographic Distribution of Corps Projects that Contain Irrigation Storage



Location of M&I and Irrigation Projects


CORPS PROJECTS WITH M & I WATER SUPPLY & IRRIGATION STORAGE
Municipal & Industrial
Irrigation
M & I and Irrigation
Puerto Rico

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Click on “Specialties” then “Water Use”

Location of M&I and Irrigation Projects

State	Project	District	Number of Contracts	Storage Space (Acre-Feet)		
				Under Contract	Not Under Contract	Total
NC	Falls Lake	SAW	1	45,000	0	45,000

Contract Price ($000)			
Under Contract	Not Under Contract	Conduit	Total
4,103.0	0	0	4,103.0

Water Supply Study

Purpose – To describe some current activities in water supply that do not fit well within current policy and procedures and to provide recommendations to fix.

Water Supply Study

1. **Small Contracts from Originally Authorized Storage**
2. **Pricing Index in Reallocations**
3. **Drought Contingency Water Supply**
4. **Seasonal Operations for M&I Water**
5. **Seasonal Operations for Irrigation Water**
6. **Repair versus Reconstruction**
7. **Dam Safety**
8. **Charging for M&I Easements**
9. **Administrative Costs Associated with Reallocations**
10. **Gross versus Net Storage**
11. **Additional Delegations**
12. **Separate Standard Formats for Water Supply Agreements**

See http//www.iwr.army.mil for 1st years study effort

Water Supply Study

1. **Small Contracts from Originally Authorized Storage**

   - not over 10 AF; cost same as large; repay storage in lump sum and include a pro-rata share of 30-year OMRR&R (Tulsa procedure)

2. **Pricing Index in Reallocations**

   - use CWCCIS for all costs after 1967

   - land is a weighted average

3. **Drought Contingency Water Supply**

   - reinforce existing regulations that all reservoirs are to have drought contingency plans and a ready to execute water agreement in place.

Water Supply Study

4. Seasonal Operations for M&I Water

- Changes the “one-half the savings” concept to “a pro-rata share based on the time of the year used.”

- Follow surplus water format, terms limited to 5-years and no permanent right to storage

5. Seasonal Operations for Irrigation Water (western problem)

- Follow Corps policies and procedures as above UNLESS

- The project is a part of a larger DoI project or DoI has irrigation works, then follow the authority, pricing policies for the Bureau; notify the Bureau of any OMRR&R expenses; the Bureau to collect as part of their contractual arrangements.

Water Supply Study

6. Repair versus Reconstruction

- In water supply agreements clarify that reconstruction is considered to be a part of repair

7. Dam Safety

- For purposes of water supply agreements, dam safety will fall under the provisions of major rehabilitation

- Costs as described in Section 1203 of WRDA 86 (which is 15% of the modification costs)

- Law permits 30-yr. repayment; policy requires up front repayment

- Existing agreements need not be modified until dam safety costs are incurred

Water Supply Study

8. Charging for M&I Easements

- Changes existing regulations to “at no cost” to “in accordance with Real Estate regulations.”

9. Administrative Costs of Reallocations

- Regulations will be updated to use “Section 905(b) analysis” in the development of reallocation reports instead of a “reconnaissance study.”

- Regulations will also be modified to indicate that the method of recovering the cost of modifying the Water Control Manual should be covered in the reallocation report.

Water Supply Study

10. Gross versus Net Storage

- Can consider net if:

o water supply is the only purpose in the conservation pool

o there is only one user of the water supply storage space

11. Additional Delegation for Original Storage

- Delegated to HQUSACE with further delegation to the districts permitted

12. Separate Storage Agreements

- Three separate agreements instead of one agreement with a lot of options

Possible FY 04 Policy Studies

- Update Water Supply Handbook
  - Policies and Procedures
  - Database (has been put into Excel)
- Water Supply Business Line
  - What are we collecting and cost to collect
  - What do we owe the Treasury
  - Maybe return some money to the District to administer contracts and perform reallocation studies
- WRDA for Water Supply
  - 58 Act, as amended
  - Policies and Procedures
  - Intent of Congress since WRDA ‘86

Water Supply Seminar

Authorities
Policies
Procedures

Economic Analysis

Reallocation
Reallocation Group Exercise

Database
Water Supply Study
Emerging Issues
National Needs

Reallocation Model Agreement

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Ed Woodruff CENWD
Janet Holsomback CESWT
Ted Hillyer CEIWR

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